SinteckNext

XT FM TRANSMITTER
LOW & MID POWER

XT-150 | XT-300 | XT-500 | XT-1000 | XT-2000 PRODUCT INFORMATION

XT-FM is a line of transmitters that offers complete solutions for those who look for signal quality allied with low operational cost. Designed from the RUS line, which consists of an innovative line of transmitters that bring as main goals energy efficiency and robustness.

They are divided into ten levels of power which can be used as exciters (XT-150 to XT-1000) or direct transmitters (XT-2000 to XT-10000). They incorporate modulating FM circuits «direct-on-channel» with audio response equivalent to DDS digital equipment, but at an affordable cost to any broadcaster.

It has robust circuits, efficient, precise and compact, aligned to a harmonious mechanical structure with unrivaled looks.

XT is exclusive, produced by those who understand radio and technology, Sinteck Next.

HIGHLIGHTS

Translate it:

- 150W (XT-150), 300W (XT-300), 500W (XT-500), 1000W (XT-1000) and 2000W (XT-2000)
- Excellent global efficiency in all models
- 3.9-inch color monitor
- High linearity VCO, the best audio quality, equivalent to DDS digital circuits
- 3kW power supply in all models up to 2000W. Eltek Flatpack Powerpack-2
- LDMOS NXP transistors, high robustness series, supporting VSWR up to 65:1
- Extreme ease of field maintenance, components and boards of easy replacement
- RF Power adjust through PRESETS with power reduction according to scheduled times
- Hybrid power supply system, AC, DC simultaneously or separately
- Progressive cooling, minimum noise production
- Dual-band audio processor incorporated with high channel separation digital DSP stereo generator
- Dynamic RDS encoder incorporated
- Complete telemetry, no monthly fees, directly through browser or applications
- Audio inputs with digital level control: one MPX input, one SCA input, stereo XLR and AES/EBU digital input
- Built-in MP3 player, flash drive USB port
- 48V DC input from solar panel, wind turbines and battery bank, with micro processed charger/float charger
- Total management of alternative energy systems, being able to work in an auto-sufficient way, without the need to connect to the AC power grid

ONE SINGLE CABINET, 5 LEVELS OF POWER

In order to achieve highly competitive prices nationally and internationally, we achieve better production costs by minimizing the number of items in the same production line.

Based on this principle, we put into one 2RU single cabinet (2 rack units, 8.9cm) five levels of power, which are 150W, 300W, 500W, 1kW and 2kW.

All of them use the same board models when it comes to microprocessors, control boards and voltage regulators, reading boards and RF probe, front panel board and keyboard, and finally the same power supply, the Eltek Powerpack-2. Evidently each model incorporates different RF pallets from one to another

Even with a relatively small cabinet, the higher power models such as the XT-1000 and XT-2000 are able to have an efficient cooling and dissipation system capable of maintaining internal low temperatures.

In all models we use a cooler management circuit which progressively raises the air flow dependent on the equipment's temperature. Although they are submitted to high temperatures inside the shelter, they remain on air with gradual reduction of power output.

3.9 INCH COLOR MONITOR

One of the advantages of the XT line is to have a built-in 3.9-inch color monitor. Besides making the looks of the equipment even more beautiful, it facilitates the comprehension of menus by the user. The screens are user friendly, it's not necessary to study the manual in detail to be able to make any configurations.

Through this monitor we have access to all of the equipment's parameters, we can easily visualize the levels of direct and reflected power, current and voltage in each of the RF modules, efficient levels (global and RF sector), input level AC and DC, internal temperatures, audio levels and several others.

Besides visualizing, we can configure and preset the equipment in a simple way.

The XT line has no external adjustments, everything is set up digitally. There are even menus that allow for output power adjustment according to time schedules, which helps (very much) to reduce the equipment's power consumption.

It is also worth recalling that all screens and presets available in this monitor are also available through the remote access (connectivity and telemetry).

COLOR MONITOR

MP3 PLAYER, EXCLUSIVE!

Being exclusive is one of the virtues of the equipment. Extending this virtue even further, our engineering team has installed an MP3 player internally, and a USB port.

By recording an auxiliary radio program, and letting it stand by, you can set the player to start at any time.

The objective of this resource is to offer audio redundancy in order to avoid being off the air due to some link problem, trouble with the audio processor, mixing console, etc.

This feature reproduces high quality audio recorded on a flash drive. In addition to playing, the player also informs the names of the songs, or the name of the radio program recorded on the flash drive.

The high reproduction quality is due to the fact that the player delivers the audio to the internal processor which levels up bass and treble, and after that, to the stereo generator. On air, the player will reproduce as good as the programming coming from the external audio processor.

POWERFUL MODULATOR, POWERFUL AUDIO

The XT line audio quality is unparalleled. There is no modulating system as perfect as Sinteck's. Those who already know Sinteck equipment can assure that.

The XT line brought innovations in this regard, which improved what was already good.

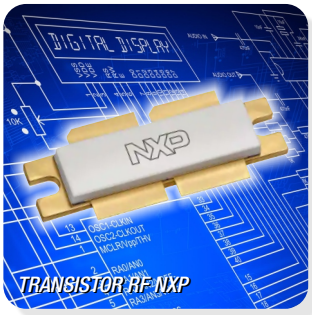
The modulator (or VCO circuit) gained more perfection. The choice of the most flat and perfect model of varicap diode made the difference, such as a correct bias circuit. The modulation is extremely flat on 20Hz to 20kHz spectrum. More precise bass, more defined mids and brighter high frequencies, all of this without distortions.

The value of a radio is given by its modulated audio quality, and also by its musical programming, the first is our responsibility!

Even if the radio does not have an external digital processor, there is no reason to worry, the XT transmitter does the processing and generates stereo with maximum quality.

Superior to competitors with the best audio, the Sinteck XT will do it for you.


HI-FI VCO



TRANSISTOR RF NXP

IS THE HIGHLY ROBUST RF NXP TRANSISTORS UNBURNABLE?

The answer to this question is: In certain forms YES. The advances made in recent years in the field of new technologies present in RF transistors have presented us with a series of practically unburnable components.

If we can control in a satisfactory way the current of each circuit, the correct excitation, the maximum work voltage, we will have a flawless system.

The XT line has an advanced protection circuit that guarantees the full operation of the equipment under extreme temperature conditions, with high variations in AC power and variations in the radiating system. The philosophy is to keep always the radio on the air, even under unfavorable situations the XT remains in operation.

In the line of transmitters with output power above 1kW, the chosen RF device was the model MRF1K50, made by the NXP company. We work with a considerable power reservation in all models because we know that this equipment cannot stop and most of time they work at 100% of their nominal power. With the use of these resources managed to use practically 75% of its total capacity maintaining a reserve of 25%, not straining the component under any condition

In all of the XT equipment we used the most up to date Eltek power supplies, a world class maker of power supplies which offers a highly reliable product present on every continent on the planet. They are hot-swap power supplies that can be disconnected very easily, just remove the front panel and undock the power supply without depending on any technical knowledge. They are units with low fails and maintenance rates.


SMPS ELTEK FLATPACK


EASE OF MAINTENANCE

EASE OF MAINTENANCE, EVERYTHING ACCESSIBLE

The ease of maintenance was one of the main purposes that was present all along with Sinteck's engineering team so that we could launch a product that did not offer great technical efforts to exchange boards or maintaining them.

To all models, most boards are the same, from the 150W to the 10kW.

We use the same VCO and PLL circuit, the same stereo generator, the same RDS coder, the same controlling circuit and the same power supplies.

Thanks to our large experience in assembling and installing transmitters, we know today which are the most vulnerable components that can eventually undergo some kind of breakdown. Normally the AC input board that protects the equipment from the electrical network are always installed in an accessible way. The Eltek power supplies are dockable and the RF pallets can easily be replaced just by removing 6 Allen screws. Finally, the RF filter, which can undergo some electrical surge, can be replaced by removing a few screws. All of it in a simple way with access directly through the equipment's top cover.

A SUPERIOR REMOTE MONITORING

All informations displayed in the color monitor is also available via web.

In addition to the user being able to monitor, they can also change settings such as power levels, adjust audio levels, save and edit presets and schedule.

There are three levels of remote connectivity, one of them is the direct access to the equipment through its own IP. The second level is external, where all the data is downloaded into an Amazon server, the same as in the RUS line. The third level is through IOS and Android applications. The user has total control of the equipment in his hands, with access via PC or smartphones. The controls are opened based on hierarchical levels which can be configured by the radio's administrator, authorizing full or limited access to any operator that has been permitted access.

Besides all this, the remote access connects itself to the Sinteck server, where on daily bases our engineering team monitors all of the connected equipment and runs a diary check on parameters of each one of them and informs the user in the event they detect anything out of the ordinary, such as trouble with the irradiating system or cooling problems on the site.

RDS CODER BUILT-IN

INTEGRADED RDS CODER, THAT'S IT: INTEGRADED

An RDS generator has been incorporated to the XT line, preventing you from spending more money buying external equipment to perform that function, and more. In case you're looking for an RDS coder to install on your radio, how about buying an modern exciter, with the maximum audio quality and with this device incorporated? On top of being a great advantage, you will reward your listeners and clients with a considerable improvement on the radio's audio quality (the equipment with output power below 1kW are considered FM exciters as well).

The internal RDS is very easy to operate and configure, either through the equipment's front panel or via web. You can simply record the name of the station and a catch phrase that will immediately be on the air with the right levels of RDS injection, adjusted internally. The integration of the RDS has not generated high production costs that could highly reflect on the sale price of the XT line.

It's not because of the internal generator that an XT transmitter would cost more. It is highly advisable to consult our sales department and request for a proposal for equipment of this magnitude. We are confident that our price is highly competitive and our quality is incomparable.

OFF THE AIR? NEVER AGAIN - HOW ABOUT BATTERY

Of all advantages offered by the XT line, the most remarkable is the opening to DC power grid connection. For the station to be able to remain on the air even with the lack of electricity, a connection for 4 batteries in series of 12V totaling 48V that feed all of the transmitter circuits was added to the system. In the back panel there is a DC input for this purpose.

As a result we have considerably reduced the negative effects of AC electrical surges and variations, the DC line being fed by the batteries will always be in the background and it will avoid peaks that could cause damage to the power supplies, on top of avoiding the station from becoming off the air for hours, it acts as a no-break.

A second circuit was put in this sector. The DC floater, that means that the transmitter itself recharges the batteries automatically and once they are charged this circuit stops operating. All of this promotes a great evolution on the level of reliability of our transmitters.

Do the math. How much would a no-break cost, an audio processor, an RDS generator? When you can have all this inside one single piece of equipment.

FRONT PANEL OVERVIEW:

REAR PANEL:

TECHNICAL FEATURES XT-2000, XT-1000, XT-500, XT-300 & XT-150:

RF Power Output:	*XT-2000: 2000W ajustable from 20W*
	XT-1000: 1000W ajustable from 10W
	XT-500: 500W ajustable from 5W
	XT-300: 300W ajustable from 5W
	XT-150: 150W ajustable from 5W
RF output impedance:	*50 Ohms*
RF output connector:	*DIN 7/16" Female*
Frequency range:	*87,5 to 108,1MHz (New special band 76,0 to 108,1MHz under request)*
Frequency steps:	*10KHz*
General settings:	*Through 4 buttons of keyboard or telemetry/connectivity settings*
Frequency stability:	*2 ppm (high precision TCXO)*
Modulation type:	*F3, FM direct modulation (VCO direct in final frequency, no frequency multiplication)*
Harmonics attenuation:	*>80dBc*
Residual AM modulation (Assyncr.)	*Approximately 0,05% (55dB)*
Residual AM modulation (Syncr.)	*Approximately 0,1% (65dB)*
Intermodulation distortion:	*<0,05% @ 1kHz*
Frequency response:	*20Hz a 200kHz*

POWER SUPPLY SECTION:

AC input:	*220V, 150 to 300V variation, 45 to 68Hz (XT-150, XT-300, XT-500 & XT-1000 also work in 110V)*
DC input:	*48V from 4x 12V batteries in series, battery recharger built-in*
Surge protection:	*Bank of varistors, gas dischargers and transorbs, circuit-breaker of fast action in the AC input*
Efficiency:	*Better than 72% in 220V AC, 85% or better in 48V DC*
Internal SMPS:	*1 Eltek Powerpack 3000W*
Power consumption at full power:	*XT-2000: 2800W*
	XT-1000: 1380W
	XT-500: 700W
	XT-300: 450W
	XT-150: 260W
AC and DC input connectors:	*Neutrik in AC line and Amphenol in DC line*

PHISICAL FEATURES:

Weight:	*37.5 lbs (17kgs)*
Dimensions:	*483mm (19") wide, 88,9mm (3-1/2") height, 470mm (18-1/2") depth*
Working temperature:	*0 to +45°C*
Maximum humidity:	*95% to +45°C (with no condensation)*

RF SECTION:

RF devices:	*XT-2000: 2 RF transistors p/n MRF1K50 NXP*
	XT-1000: 1 RF transistor p/n MRF1K50 NXP
	XT-500: 2 RF transistors p/n MRFE6VP5300 NXP
	XT-300: 1 RF transistor p/n MRFE6VP5300 NXP
	XT-150: 1 RF transistor p/n MRFE6VP5300 NXP

CPU & DISPLAY:

CPU:	*Arm M7 ST Software XTV2020*
Telemetry:	*Incorporated, direct access by internet browser or applications*
Digital audio control:	*It controls digitally audio levels, processor presets, RDS coder, etc.*
Digital power control:	*Power Raise, Lower & Lock (among others recorded by the user)*
Monitor:	*TFT Color 3.9 Inch 480 x 128 pixels*

XLR AUDIO INPUTS (ANALOGICS & DIGITAL):

Connectors:	*XLR Female*
Digital audio input:	*AES/EBU (through XLR inputs port R, selected for AES/EBU in the front panel or via telemetry)*
Input impedance:	*600 Ohms balanced*
Frequency response:	*20Hz to 15kHz (THD+N < 0,1%)*
Analogic input level:	*0dB to 75KHz of carrier deviation*
Stereo separation:	*Better than 60dB @ 1kHz*
USB port (front panel):	*MP3 player*

MPX INPUT:

Connetion type:	*1 MPX input by BNC connector, digital level adjust*
Frequency response:	*20Hz to 200KHz +/- 1dB to 75kHz of carrier deviation*

SCA INPUT:

Connetion type:	*BNC connector, digital level adjust*
Frequency response:	*15kHz to 200KHz +/- 1dB to 75kHz of carrier deviation*

RDS TONE SYNC OUT:

Connetion type:	*BNC connector, 1Vpp fixed*

REMOTE CONTROLS:

Control input:	*Use INTERLOCK input (BNC) in the rear panel. When connected to level 0 allows power selection of presets, Power Raise and Power Lower. Set to level 1 does not allow any power setting, it will stay fixed in the power level preseted as Power Lock*
	05712-20-02884

Authorized Dealer:

Sinteck Next in more than 30 countries

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